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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/657,152 | 09/09/2003 | Isao Mochizuki | 117047 | 1896 |

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| EXAMINER |
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MOON, SEOKYUN

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| ART UNIT | PAPER NUMBER |
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2629

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/657,152 | Applicant(s) MOCHIZUKI ET AL. | |
| | Examiner Seokyun Moon | Art Unit 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,10,12,18-23,25-29 and 33 is/are rejected.
- 7) ☒ Claim(s) 2-7,9,11,13-17,24 and 30-32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement (IDS) filed on September 09, 2003 has been acknowledged and considered by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Regarding **claims 1, 8, and 18**, the phrase "*in correspondence with*" renders the claim indefinite because it is unclear whether the limitations disclosed after the phrases, "*the horizontally arranged state...*" and "*the folded state...*" are sufficient conditions or necessary conditions for accomplishing the previous disclosed limitations, "*the display being openable*" and "*the display being foldable*". In other words, it is unclear whether the later disclosed limitations, "*the horizontally arranged state*" and "*the folded state*" are required to accomplish the previous disclosed limitations, "*the display being openable*" and "*the display being foldable*" or not.

As best understood by the examiner, the phrase, "*in correspondence with*" will be interpreted as "*in*" for further examination purpose.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1 and 27** are rejected under 35 U.S.C. 102(b) as being anticipated by Furuki et al. (US Pub. No. 2002/0050980 A1, herein after referred to as "Furuki").

As to **claim 1**, Furuki teaches an input device ("*keyboard input device*") including:

a foldable keyboard including a first keyboard unit ("*first keyboard unit 2a*"), a second keyboard unit ("*second keyboard unit 2b*"), and a rotatable connecting part ("*unit hinge 4*") provided between the first and second keyboard units, so that the first and second keyboard units are rotated relative to a first axis to come apart from each other into an unfolded, horizontally arranged state through the connecting part for use of the keyboard [fig. 18], while the first and second keyboard units are rotated relative to the first axis to come close to each other into a closed, folded state through the connecting part for nonuse of the keyboard [fig. 16], and

a foldable flexible (rotatable in two directions as shown in fig. 19) display ("*flat display portion*") rotatably attached to one edge of the first or second keyboard unit in order to rotate relative to a second axis, the display being openable relative to a support

point ("*point O*" as shown in fig. 19) in the horizontally arranged state of the first and second keyboard units and foldable relative to a support point in correspondence with the folded state of the first and second keyboard units [fig. 17].

As to **claim 27**, Furuki [fig. 1] teaches the first ("*first keyboard unit 2a*") and second keyboard units ("*second keyboard unit 2b*") each are of a rectangular shape having long sides and short sides, and the flexible display is folding along the long sides [figs. 16 and 17].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim 8** is rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki.

All of the claim limitations have already been discussed with respect to the rejection of claim 1 except for a computer main unit being provided to the first or second keyboard unit.

Furuki does not expressly disclose having a computer main unit in the first or second keyboard unit.

However, examiner takes official notice that it is well known in the art to implement a computer main unit such as CPU in a keyboard unit rather in a display unit, as shown in the structure of laptops widely adopted at the time of the invention.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to specify Furuki to include the computer main unit in the first or second keyboard unit in order to reduce the weight of the display, thus to reduce the stress applied on the linkage part connecting the keyboard units and the display.

9. **Claims 10 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki in view of Noguchi et al. (US Pat. No. 4,341,980, herein after referred to as "Noguchi").

Furuki does not teach a resilient metallic thin plate being laminated to a rear surface of the flexible display.

However, Noguchi [fig. 2] teaches a rear surface ("*back base plate 11*") of a display device being made of resilient metallic plate ("*elastic metal plate*") [col. 4 lines 59-60].

It would have been obvious to one of ordinary skill in the art at the time of the invention to implement a resilient or elastic plate on the rear surface of Furuki's display, as taught by Noguchi, in order to absorb any stress / pressure provided to the display device [col. 9 lines 23-27].

10. **Claims 19 and 22** are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki in view of Lemman (US Pub. No. 2001/0054986 A1).

As to **claim 19**, Furuki does not teach the flexible display being widened from the folded state to a state extending in a direction parallel to a long side of the keyboard in which the first and second keyboard units are horizontally arranged.

However, Leman [fig. 1] teaches a display (a combination of “*first display 106*” and “*second display 110*”) included in a laptop computer, widened from the folded state to a state extending in a direction parallel to a long side of the keyboard.

It would have been obvious to one of ordinary skill in the art at the time of the invention to replace Furuki's display with Leman's display, in order to provide an additional portion of a display allowing a wider display for a better view for the device user.

As to **claim 22**, all of the claim limitations have already been discussed with respect to the rejection of claim 19.

11. **Claims 20, 21, 23, 25, 26, 28, and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Furuki and Leman as applied to claim 19 above, and further in view of Katz (US Pat. No. 6,088,220).

As to **claim 20**, Furuki modified by Leman teaches the keyboard having a first length in the horizontally arranged state of the first and second keyboard units [Furuki: fig. 18], and the flexible display being folded, due to the flexibility, to another length [Leman: fig. 2].

Furuki modified by Leman does not teach expressly about the dimensions of the display in folded and unfolded state.

However, Katz teaches a foldable display and a foldable keyboard to have a dimension, wherein the flexible display including a display part to have a length substantially equal to the first length of the horizontally arranged keyboard and to have a second length equal to a folded keyboard as shown in Fig. 5.

It would have been obvious to one of ordinary skill in the art at the time of the invention to indicate the modified Furuki's display and keyboard to have a dimension as disclosed above, in order to cover the exterior portion of the display fully with the keyboard portion, thus to prevent any scratch / damage on the exterior portion of the display.

As to **claim 21**, all of the claim limitations have already been discussed with respect to the rejection of claims 8 and 20.

As to **claim 23**, all of the claim limitations have already been discussed with respect to the rejection of claim 20.

As to **claim 25**, all of the claim limitations have already been discussed with respect to the rejection of claim 20.

As to **claim 26**, all of the claim limitations have already been discussed with respect to the rejection of claim 20.

As to **claim 28**, all of the claim limitations have already been discussed with respect to the rejection of claim 20.

As to **claim 29**, all of the claim limitations have already been discussed with respect to the rejection of claim 21.

12. **Claim 33** is rejected under 35 U.S.C. 103(a) as being unpatentable over Katsura (US Pat. No. 6,377,324 B1) in view of Kim (US Pub. No. 2003/0043087 A1).

Katsura [fig. 1] teaches a display including:

a first cover member ("*main body 1*");

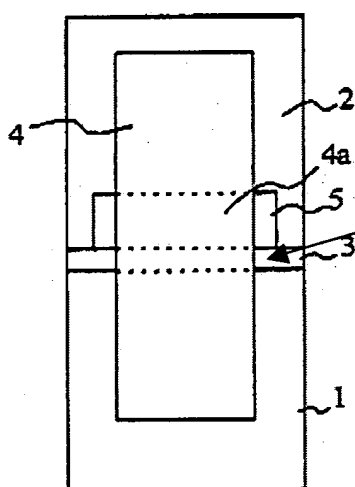
a second cover member ("*lid 2*") provided side by side with the first cover member;

a joint ("*hinge 3*") provided between the first and second cover members;

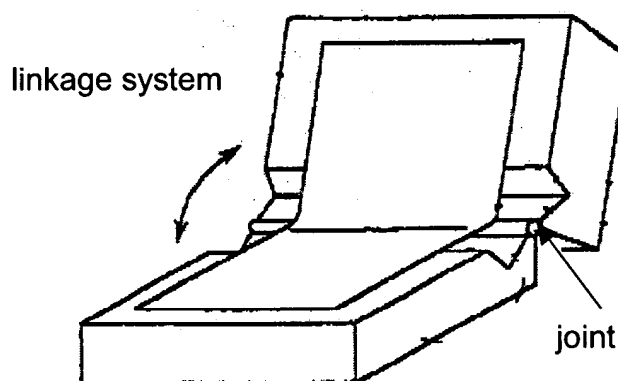
a linkage system integrally formed with the joint at both ends thereof, the linkage system [drawings 1 and 2 provided below]; and

a flexible display sheet ("*display panel 4*") placed over the first cover member, the joint, and the second cover member,

the second cover member being foldable through the linkage system with respect to the first cover member.



Drawing 1



Drawing 2

Katsura does not teach a pair of link parts coupling the first and the second cover member, included in the linkage system and the second member being slidable.

However, Kim [fig. 2] teaches a linkage system ("*support structure*") having a pair of link parts ("*bolts 36a and 36b*") coupling a first ("*first screen 14*") and a second

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displays ("second screen 12"), which allows the second display to be slidable [abstract lines 10-17].

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Katsura's linkage system as taught by Kim, in order to allow easier folding of the displays [abstract lines 19-22].

Allowable Subject Matter

13. **Claims 2-7, 9, 11, 13-17, 24, 30, 31, and 32** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

14. Applicant's arguments with respect to claims 1, 8, 10, 12, 19, 22, 25, 29, 30, and 32 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Christ, Jr. (US Pat. No. 6,532,147 B1) teaches a portable computer having a display screen being rotatably connected to hinges to enable the display screen to be positioned above the base or on the base in either a face-up or face-down position.

Iredale (US. Pub. No. 2004/0125549 A1) teaches a laptop computer having a linkage member allowing the display of the computer to be positioned in plural ways.

16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

July 7, 2006
S.M.

AMR A. AWAD
PRIMARY EXAMINER
